

Amendments to the Claims

Claims 1-15 (cancelled)

Claim 16 (previously presented): A process to manufacture vinyl acetate in a fluid-bed reactor containing feed stream inlets and gas outlets, in which mixtures comprising ethylene and acetic acid and an oxygen-containing gas are contacted with a particulate fluid-bed catalyst, comprising:

(a) introducing feed to the reactor in more than one inlet such that a feed stream primarily containing ethylene, acetic acid, or a mixture thereof does not contain oxygen within flammability limits, and such that a feed stream primarily containing an oxygen-containing gas does not contain hydrocarbons within flammability limits;

(b) controlling the amount of oxygen entering the reactor such that the outlet gas mixture is outside flammability limits; and

(c) recovering vinyl acetate,

wherein the amount of particulate catalyst including inert fluidizable particulates present in the fluid bed reactor is maintained at a level sufficient to allow for dissipation of heat generated during the reaction, and

wherein the total amount of oxygen employed is higher than may be used without danger of flammability, if all feed streams were combined and the concentration of oxygen in the combined gaseous feeds entering the reactor is at least 9 volume percent.

Claim 17 (cancelled)

Claim 18 (previously presented): The process of claim 16 wherein the reactor pressure ranges from about 50 to about 200 psig.

Claim 19 (previously presented): The process of claim 16 wherein the reactor temperature ranges from about 100°C to about 250°C.

Claim 20 (previously presented): The process of claim 16 wherein the oxygen-containing gas contains hydrocarbons comprising ethylene or acetic acid outside flammability limits.

Claim 21 (previously presented): The process of claim 16 wherein 60% of the particulate fluid bed catalyst has a particle size diameter below 200 microns and no more than 40% of the particulate catalyst has a diameter less than 40 microns.

Claim 22 (previously presented): The process of claim 16 wherein 50% of the particulate fluid bed catalyst has a particle size diameter below 100 microns and no more than 40% of the particulate catalyst has a diameter less than 40 microns.

Claim 23 (previously presented): The process of claim 16 wherein the particulate catalyst is combined with particulate inert material.

Claim 24 (previously presented): The process of claim 16 wherein the concentration of ethylene in the combined gaseous feeds entering the reactor is between 30 to 70 volume percent.

Claim 25 (previously presented): The process of claim 24 wherein the concentration of acetic acid in the combined gaseous feeds entering the reactor is between 10 to 25 volume percent.

Claim 26 (previously presented): The process of claim 25 wherein the concentration of oxygen in the combined gaseous feeds entering the reactor is between 9 to 15 volume percent.

Claim 27 (previously presented): The process for manufacturing vinyl acetate in a fluid bed reactor in which an oxygen-containing gas, ethylene and acetic acid are reacted in the presence of a fluid bed catalyst material to produce vinyl acetate, wherein the improvement comprises feeding ethylene and acetic acid into said fluid bed reactor through one or more inlets, and feeding an oxygen-containing gas stream into said fluid bed reactor through at least one further inlet provided that each of said streams fed to the reactor is outside its flammability limits, whereby levels of oxygen are employed higher than may be used in a fixed bed reactor, without danger of flammability and wherein the concentration of oxygen in the combined gaseous feeds entering the reactor is at least 9 volume percent, and co-joining the oxygen-containing gas, ethylene and acetic acid while in contact with said fluid bed catalyst material in said fluid bed reactor to enable the ethylene, acetic acid and oxygen to react to produce vinyl acetate and recovering said vinyl acetate from said fluid bed reactor, and wherein the amount of particulate catalyst including inert fluidizable particulates present in the fluid bed reactor is maintained at a level sufficient to allow for dissipation of heat generated during the reaction.

Claim 28 (currently amended): The process of claim 27 wherein the concentration of ethylene in the combined gaseous feed entering the reactor is between 30 to 70 volume percent, the concentration of acetic acid in the combined gaseous

feeds is between 10 to 25 volume percent, and the concentration of oxygen in the combined gaseous feeds is between ~~8 to 25~~ 9 to 15 volume percent.

Claim 29 (previously presented): The process of claim 27 wherein the concentration of oxygen in the combined gaseous feeds entering the reactor is between 9 to 15 volume percent.